U.S. Army Space and Missile Defense Command
Space and Missile Defense Technical Center
Data Analysis and Exploitation Directorate

Optical Discrimination and Analysis Program

Providing Flight Test Data Analysis and Algorithm Products to the MDA Community

The Optical Discrimination and Analysis (ODA) program was established in 1992 in support of Missile Defense Agency (MDA) efforts in the areas of interceptor flight test data collection planning, data analysis, target model development and signature generation, and algorithm development and evaluation, as well as MDA-directed special studies. The program operates in an integrated team environment to provide accurate, relevant and timely analysis products to the MDA community.

Data Collection Planning

ODA analysts support pre-mission data collection planning activities to enhance the collection of high-quality data of interest to the MDA community. Some of those data include optimum sensor suite and launch time recommendations, mission requirements planning support, detailed data-handling plans and the identification of risks/issues as well as recommended solutions.

Data Analysis

ODA data analysts provide on-site flight test support to coordinate auxiliary sensor data collection, ensure timely data delivery, provide input to public relations products and generate quick-look reports, followed by more detailed analysis at the ODA Development Center to investigate any unexpected phenomena. Data analysts perform multi-sensor, multi-flight comparisons to supplement the analysis products generated by each individual sensor.

Target Model Development

ODA analysts develop simulated target models to generate expected radiometric and metric characteristics to support flight test risk-reduction activities. Potential data sources include seeker, auxiliary sensor and thermocouple data. Simulated target signature statistics and images are also generated in support of algorithm development and evaluation activities.

Algorithm Development and Evaluation

At the ODA Development Center, analysts review, implement, and evaluate MDA system element algorithms and provide recommendations back to the system elements to improve overall performance. Analysts also develop and evaluate alternate algorithms to potentially enhance performance.

MDA Special Studies

ODA has participated in several MDA-directed special studies to address issues of high interest to the MDA community. Until now, the most extensive effort involved analyzing, characterizing, and identifying the potential impacts of the radiant trail data collected on the Willow Dune missions. Specific recommendations resulting from this study are continuing to guide MDA follow-on efforts.

For more information, please contact:

U.S. Army Space and Missile Defense Command
Public Affairs Office
P.O. Box 1500
Huntsville, AL 35807-3801
Phone: 256-955-3887
Fax: 256-955-1214
Email: webmaster@smdc.army.mil
www.smdc.army.mil